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January 31, 2005
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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Inventors:	BOAL et al	Group Art Unit: 1772
Serial No.:	09/446,807	Examiner: Patterson, Marc A., PhD
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Title: "PATCH BAG HAVING SEAL THROUGH PATCH"

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APPEAL BRIEF UNDER 37 CFR § 41.37

Sir:

This Brief is being filed in triplicate and further to the Notice of Appeal mailed 28 September 2004, which is datestamped 30 September 2004 by the OIPE. The two-month period for the filing of the brief is extended two months, i.e., through Monday 31 January 2005, by the accompanying request for a 2-month extension of time. Pursuant to 37 CFR §41.20(b)(2), please charge Deposit Account No. 07-1765 in the amount of $500.00 for filing this Brief. This sheet is being filed in duplicate.

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(1) Real Party in Interest

The real party in interest is Cryovac, Inc., assignee of the above-referenced patent application.

(2) Related Appeals and Interferences

There are no other appeals, interferences or judicial proceedings known to Appellant, Appellant's legal representative, or Assignee which may be related to, directly affect, be directly affected by, or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The claims on appeal are pending Claims 1-23. A copy of Claims 1-23 appears in the Appendix. Claims 3, 5, 7-17, and 19-21 are as originally filed. Claims 2, 4, 6, 18, and 22 have been amended once. Claim 23 has been amended twice. Claim 1 has been amended 3 times.

(4) Status of Amendments

No amendment has been filed after the Notice of Appeal mailed 28 September 2004. All of the amendments filed before the filing of the Notice of Appeal have been entered.

(5) Summary of the Claimed Subject Matter

As a first aspect, the invention is directed to an end-seal patch bag 14 comprising a heat-shrinkable bag 16 comprising a seamless tubular bag film, and a heat-shrinkable patch 22 comprising a patch film. [Page 2 lines 1-3; FIGs. 1 and 2] The patch 22 is adhered to the bag 16, and the patch 22 extends across an entire width of a first lay-flat side of the tubular bag film. [Page 2 lines 3-4; FIGs. 1 and 2] The patch bag 14 has a seal 26 across the bottom thereof. [Page 2 lines 4-5; FIG. 1] The seal 26 is continuous across the entire width of the lay-flat bag film. [Page 2 line 5; FIG. 1] The seal 26 is through the patch 22 as well as through both lay-flat sides of the bag 16. [Page 2 lines 5-6] The seal 26 is the only seal across the bag 16. [Page 2 lines 6-7; FIG. 1] The bag 16 has a top 18 which is not covered by the patch. [Page 2 lines 31-32; FIG. 1]

As a second aspect, the invention is directed to a patch bag 14 comprising a heat-shrinkable bag 16 comprising a tubular bag film, and a heat-shrinkable patch 22 comprising a patch film. [Page 2 lines 8-10; FIGs. 1 and 2] The patch 22 is adhered to the bag 16, and the patch bag 14 has a seal 26 which is through both the patch 22 as well as through both lay-flat sides of the bag 16. [Page 2 lines 10-11; FIGs. 1 and 2] The sealed bag has a burst strength of at least 26 inches of water in a Linear Ramp Hot Burst Grease Test. [Page 2 lines 11-12]

The invention is also directed to a side-seal patch bag 268, in which both the first patch 286 and the second patch 288 extend across an entire length of the bag. [Page 2 lines 22-23; FIGs. 11 and 12] Side seal patch bag 268 has a first seal 270 along a first edge of the bag and a second seal 272 along a second edge of the bag, and a folded bottom edge 280.

[Page 2 lines 23-25; FIGs. 11 and 12] The first and second seals 270 and 272 are through the first patch 286, the second patch 288, and the bag film 290.

The invention is also directed to a patch bag 14, 268 wherein the seal has a width of from about 0.015 inch to about 0.25 inch. [Page 3 line 9; FIGs. 1 and 11]

As a third aspect, the present invention is directed to a process for making a patch bag. [Page 3 lines 12-13; FIG. 7] The process comprises: (A) adhering first patch film 206 to an outside surface of a first lay-flat side of a lay-flat bag film tubing 150, (B) adhering second patch to an outside surface of a second lay-flat side of a lay-flat bag film tubing 150, (C) sealing an inside surface of the film tubing 150 to itself, and (D) cutting across the tubing 150. [Page 3 lines 12-21 and FIG. 7] The first and second patches 22 and 24 each have a width greater than the width of the lay-flat tubing 16. [Page 3 lines 14-15, FIG. 1] The sealing is carried out by applying heat to each of the patch outside surfaces. [Page 3 lines 17-18] The heat is applied by a first means for heating and a second means for heating, the first and second means for heating being in alignment with one another. [Page 3 lines 18-28; FIG. 8; and see Page 27 line 13 through Page 28 line 5] The patches and bag tubing are both between the first and second heating means during sealing. [Page 3 lines 19-21]

The invention is also directed to a process wherein the second seal bar 248 has a convex surface which is in alignment with, and oriented towards, the flat surface of the first seal bar 238. [Page 3 lines 25-26; FIG. 8; Page 27 line 30 through Page 28 line 2]

(6) Grounds of Rejection to be Reviewed on Appeal

I. Whether Claims 1-3 and 5-12 Are Unpatentable under 35 USC 102(b) as Anticipated by BRADY et al '688

[NOTE: Arguments for the patentability of independent Claim 1 are provided under heading "I(A)" below, with arguments for the patentability of independent Claim 2 and dependent Claims 3 and 5-12 being provided under heading "I(B)" below.]

II. Whether Claim 13 Is Unpatentable under 35 USC 103(a) as Obvious over BRADY et al '688

III. Whether Claim 4 Is Unpatentable under 35 USC 103(a) as Obvious over BRADY et al '688 in view of HERRINGTON

IV. Whether Claims 14-15, 17, and 19-22 Are Unpatentable under 35 USC 103(a) as Obvious over BRADY et al '688 in view of SAMSON

V. Whether Claims 16, 18, and 21-23 Are Unpatentable under 35 USC 103(a) as Obvious over BRADY et al '688 in view of SAMSON further in view of SHABRAM

(7) Argument

I(A) Claim Is Not Anticipated by, and Is Patentable over, BRADY et al '688

Appellants contend that Claim 1 is patentable over International Patent Application No. WO 96/00688, to Brady et al ("BRADY et al '688"). Section 2 of the final Office Action mailed 3 June 2004 reiterates the positions taken in previous office actions, i.e., that BRADY et al '688 teaches to seal through both the patch and the bag. All of the Office Actions refer specifically to Page 19 lines 15-31 of BRADY et al '688 for the disclosure of sealing through both the patch and the bag.

Appellants contend that Claim 1 is not anticipated by BRADY et al '688 and is patentable over BRADY et al '688. Attention is directed to Appellants' Claim 1:

> Claim 1: An end-seal patch bag comprising a heat-shrinkable bag comprising a seamless tubular bag film, and a heat-shrinkable patch comprising a patch film, the patch being adhered to the bag, the patch extending across an entire width of a first lay-flat side of the tubular bag film, the patch bag having a seal across the bottom thereof, the seal being continuous across the entire width of the lay-flat bag film, **the seal being through the patch as well as through both lay-flat sides of the bag**, ***the seal being the only seal across the bag***, the bag having a top which is not covered by the patch. [Claim 1 on appeal, emphasis added]

Appellants direct particular attention to the recitation in Claim 1 of the combination of features of a seal which is both (a) through the patch as well as through both lay-flat sides of the bag, and (b) the only seal across the bag. The Office Action relies upon Page 19 lines 15-16 of BRADY et al '688 for the disclosure of a seal which is through both the patch and a seamless tubular bag. Appellants direct attention to the entire paragraph of

BRADY et al '688 which the final Office Action relies upon, i.e., Page 19 lines 15-31 of BRADY et al '688, as follows:

> Although not illustrated, two additional features can be utilized in the patch bag according to the present invention. The first feature, of particular advantage in the end-seal patch bag illustrated in FIGS. 1 and 2, is a supplemental end-seal across the bag, **this supplemental end-seal being parallel to the bottom seal but above, i.e., inward of, the bottom seal**, i.e., preferably a supplemental bottom seal produced by sealing through both patches as well as sealing through the bag, although the supplemental seal can be through the bag only, at a location within, for example, one-eighth of an inch from the bottom edge of the patches. The supplemental seal can be continuous across the bag, or can be a series of intermittent "tack welds". In either event, the purpose of the supplemental seal is to prevent the primary seal from being subjected to pressure by the product within the bag, and to protect the bottom end of the product by ensuring that substantially the entirety of the bottom of the product is covered by the patches. This particular features is discussed in detail in copending U.S. patent application Ser. No. 278,367, now U.S. Pat. No. 5,545,419, to BRADY et. al., entitled "PATCH BAG HAVING SUPPLEMENTAL SEAL". Of course, the feature is useful regardless of whether the patch is overhanging. [BRADY et al '688, Page 19 lines 15-31, emphasis added]

The emphasized portion of the above excerpt from BRADY et al '688 clearly states that the "supplemental end seal" across the bag is parallel to the bottom seal, and inward of the bottom seal. Thus, this portion of BRADY et al, considered in its entirety, discloses the supplemental end seal as being a seal which is present *in combination with the bottom end seal*. The term "supplemental" means that the supplemental seal supplements the other seal, i.e., the bottom seal. Both the bottom seal and the supplemental seal are across the bag. As such, BRADY et al '688 cannot possibly anticipate Appellants' Claim 1, which recites the seal through the patch and the bag as being the "...***only*** seal across the bag...."

Page 4 of the final Office Action also refers to Page 19 lines 11-14 of BRADY et al '688 as stating that "...sealing through the patches produces a patch (sic, seal) which is

not as strong as the patch (sic, seal) which is only made through the bag...." The Office Action states that this is acknowledgement that sealing through the patches is well known in the art, and is used for the purpose of making the bag, but that sealing through the bag alone is preferable.

In response, Appellants again direct attention to the entire paragraph of BRADY et al which the Office Action relies upon, i.e., Page 19 lines 8-14 of BRADY et al, as follows:

> Thus, over the length of bag 21 on which first patch 30 and second patch 32 are adhered, the full width of bag 21 is "covered" by the combination of patches 30 and 32, i.e., together, patches 30 and 32 constitute a "full width" coverage of bag 21. ***The two end portions of bag 20 are not covered by patches 30 and 32 in order that strong end seals can be made through bag 21, without having to seal through both of patches 30 and/or 32, which would be weaker than sealing through bag 21.*** [BRADY et al, Page 19, lines 8-14, emphasis added]

Contrary to the statements in the Office Action, Appellants contend that this portion of BRADY et al, taken in the context of BRADY et al as a whole, teaches away from sealing through the patch by teaching that sealing through the bag alone produces a stronger seal than sealing through the patch or patches. That is, one of ordinary skill in the art, reading BRADY et al in its entirety, would not be taught or motivated to seal through the patch, because BRADY et al teaches that sealing through the patch produces a seal of inferior strength. One of skill in the art would have known that seal strength is an important feature for a patch bag, as a weak seal can fail due to impact from a heavy meat product being loaded into the bag, during shipping and handling, etc. As a result, Appellants contend that Page 19 lines 8-14 of BRADY et al teaches away from, rather than toward, sealing through one or more of the patches.

I(B) Claims 2-3 and 5-12 Are Not Anticipated by, and Are Patentable over, BRADY et al '688

Appellants' turn to their independent Claim 2, as follows:

> A patch bag comprising a heat-shrinkable bag comprising a tubular bag film, and a heat-shrinkable patch comprising a patch film, the patch being adhered to the bag, the patch bag having a seal which is through both the patch as well as through both lay-flat sides of the bag, **the sealed bag having a burst strength of at least 26 inches of water in a Linear Ramp Hot Burst Grease Test**. (Appellants' Claim 2, emphasis added)

Appellants note that each of rejected Claims 3 and 5-12 depend, either directly or indirectly, from Claim 2. Appellants also direct attention to Page 1 lines 21-32 of their specification, as follows:

> It has been discovered that it is difficult to measure the seal strength of an intermittent secondary seal. It would be desirable to provide patch coverage down to the bottom seal of the bag, without having to make a supplemental seal and without having to settle for a seal of inferior strength, i.e., compared with a seal made through only the bag film. It has been discovered that a seal can be made through both the patches and the bag, the seal having a strength which is substantially equivalent to the strength of a seal through the bag alone, or even superior to the strength of a seal through the bag alone. **In the past, a through-bag-and-patch seal strength of only about 16 to 20 inches of water was obtained, measured via a Standard Linear Ramped Hot Burst Grease Test, described below.** ***However, using the apparatus and process which Applicants' have discovered, surprisingly a through-bag-and-patch seal strength of from at least about 24 up to at least about 48 inches of water has been achieved, using the same test for seal strength.*** [Appellants' specification, Page 1 lines 21-32, emphasis added]

This portion of Appellants' specification states that prior to the present invention, a through-the-patch-and-bag seal strength of only 16 to 20 inches of water could be

obtained, but that Appellants' have discovered that they can produce a through-the-patch-and-bag seal strength of from at least about 24 up to at least about 48 inches of water. Thus, Appellants have disclosed in their specification that they have been able to increase the through-the-patch-and-bag seal strength to a level previously unobtained.

Appellants point out that Claim 2 recites the sealed bag as having a burst strength of at least 26 inches of water in a Linear Ramp Hot Burst Grease Test. The recited bag burst strength of at least 26 inches of water is a minimum pressure the patch bag can withstand. That is, the patch bag (including the seal) can maintain a pressure of at least 26 *vertical inches of water* without bursting, i.e., without film rupture and without rupture of the heat seal. This means that the recited heat seal, which is through the patch, also has to be strong enough to allow at least 26 vertical inches of water to be maintained inside the bag. Appellants have disclosed and claimed a particular process and apparatus which enables the heat seal to be strong enough to maintain this strength level. BRADY et al '688 does not teach or suggest any sealing process which is inherently capable of enabling this seal strength. Moreover, BRADY et al '688 goes so far as to admit that the seal made through the patch will be "weak", which is tantamount to disclosing that such a seal would not provide the patch bag with a high pressure-to-burst. As if that is not enough, Appellants' specification refers to the weakness of prior attempts to seal through the patch:

> It has been discovered that it is difficult to measure the seal strength of an intermittent secondary seal. It would be desirable to provide patch coverage down to the bottom seal of the bag, without having to make a supplemental seal and without having to settle for a seal of inferior strength, i.e., compared with a seal made through only the bag film. It has been discovered that a seal can be made through both the patches and the bag, the seal having a strength which is substantially equivalent to the strength of a seal through the bag alone, or even superior to the strength of a seal through

> the bag alone. ***In the past, a through-bag-and-patch seal strength of only about 16 to 20 inches of water was obtained, measured via a Standard Linear Ramped Hot Burst Grease Test, described below. However, using the apparatus and process which Applicants' have discovered, surprisingly a through-bag-and-patch seal strength of from at least about 24 up to at least about 48 inches of water has been achieved, using the same test for seal strength.*** [Appellants' specification , Page 1 lines 21-32, emphasis added.]

The above excerpt from Appellants' specification states that prior efforts to seal through the bag and patch have not been able to achieve the seal strength Appellants have achieved using the apparatus and process of the present invention. It should be noted that Appellants' application is assigned to Cryovac, Inc., which is also the assignee of BRADY et al '688. This is important because Appellants are well aware of the patch bags of BRADY et al '688, and the above excerpt from Page 1 lines 21-32 was made (and sworn to) based on knowledge of the strength of the supplemental seal of BRADY et al '688, the preferred embodiment of which was available to Appellants for purposes of comparison, including comparison of seal strength. Thus, BRADY et al '688 would NOT have provided one of ordinary skill in the art with a means for obtaining a through-the-patch seal having the strength recited in Appellants' Claim 2. As a result, Appellants contend that Claim 2, and all claims depending therefrom, are not anticipated by BRADY et al n'688, and are nonobvious over BRADY et al '688.

The final Office Action states that 26 inches of water is not claimed as a pressure-to-burst, but as the burst strength of the bag, and further states that the recited strength is indefinite because inches are not a known measure of strength, and that the size of the bag is not claimed, so it is unclear what volume and weight of water the 26 inches of water

corresponds to, or what pressure it corresponds to, and that the strength of the bag is unclear from the specification, and that BRADY et al '688 does not teach that sealing through the patches will produce a patch (sic, seal) which is weak, only that the seal will not be as strong as a seal through the bag alone.

In response, Appellants note that 26 inches of water is recognized as a pressure measurement, just as 760 millimeters of mercury is recognized as a pressure measurement. One of ordinary skill in the art recognizes that a burst strength of at least 26 inches of water means that the patch bag is capable of withstanding the pressure exerted by a hydrostatic head of water which is 26 inches in height, without rupture. This vertical column of water exerts pressure on the patch bag, including the films as well as the seal at the bottom of the bag. If the patch bag bursts, it is due either to (a) the failure of the film and/or (b) the failure of the seal.

Claim 2 does not recite the "at least 26 inches of water" as a pressure at which the patch bag bursts, but rather recites the patch bag as having "...a burst strength of at least 26 inches of water...." Clearly, the patch bag has a burst strength of at least 26 inches of water, regardless of the size of the patch bag.

Moreover, contrary to the statements in the final Office Action, Appellants have disclosed that the state of the art at the time of BRADY et al '688 produced a patch having a seal strength which is only 16-20 inches of water. See the above quoted excerpt from Appellants' specification.

Based on all the reasons pointed out above, the recitation of the patch bag as having a burst strength of at least 26 inches of water is not indefinite. In fact, a rejection of Claim 2 as indefinite for the recitation of "a burst strength of at least 26 inches of water" was made in

the Office Action of April 9, 2003, and thereafter not repeated in the final Office Action of 3 June 2004. In fact, the final Office Action of 3 June 2004 states that "The 35 U.S.C. 112 second paragraph rejection of Claims 1-13 (sic, Claims 2-13?), of record on page 2 of the previous Office Action, is withdrawn." Moreover, the 35 USC 112 second paragraph rejection of Claims 2-13 was NOT among the "REPEATED REJECTIONS" set forth in the final Office Action of 3 June 2004. Moreover, the recitation of "a burst strength of at least 26 inches of water" is not indefinite for the reasons set forth above.

II. Claim 13 Is Patentable over, BRADY et al '688

Claim 13 is rejected as unpatentable over BRADY et al '688. The Office Actions have stated that BRADY et al '688 fails to disclose a bag having a seal width of from 0.015 to 0.25 inches, but that BRADY et al discloses a bag in which the seal has a width less than 13 to 17 inches, and that the width of the seal would be readily determined through routine optimization by one of ordinary skill in the art, depending upon the desired result.

In response, Appellants contend that Claim 13 is patentable over BRADY et al for at least the reasons that Claim 2 is patentable over BRADY et al, and for the additional reason that the statements in the Office Action refer to the *length* of the seal in BRADY et al, whereas Claim 14 recites the *width* of the seal. More particularly, the "width of less than 13-17 inches" is clearly the width of the bag, which corresponds with the length of the seal, not the width of the seal. The Office Action fails to refer to any specific portion of BRADY et al which teaches or suggests the recited seal ***width*** of 0.015 to 0.25 inches.

Page 5 of the final Office Action states that "...13-17 inches is actually the width of the bag", and therefore the seal of BRADY et al '688 "...must therefore have a width of less

than 13-17 inches." In response, Appellants note that the final Office Action continues to fail to recognize the difference between the *width of the bag* and the *width of the seal*. The width of the bag (which is made by sealing across a seamless tubing of film) corresponds with the *length* of the seal. Appellants' Claim 13 recites the *width* of the seal. Appellants' FIG. 1 illustrates seal 26 which is long and narrow. Claim 13 recites this seal as having a width of from about 0.015 inch to about 0.25 inch. This corresponds with the width of seal 26 of BRADY et al '688, not the length of seal 26.

Although the Office Action does not refer to any portion of BRADY et al '688 which discloses a seal having a width of from about 0.015 inch to 0.25 inch, in fact patch bags in accordance with BRADY et al '688 have been made and sold in the US before April 4, 1996, and such bags did have a seal which was through the bag only, said seal having a width within the range of from about 0.015 inch to about 0.25 inch. Nevertheless, Claim 13 is patentable for at least the same reasons that Claim 2 is patentable.

III. Claim 4 Is Patentable over BRADY et al '688 in view of HERRINGTON

Claim 4 stands rejected as unpatentable over BRADY et al in view of U.S. Patent No. 4,561,109, to Herrington ("HERRINGTON"). The Office Actions have stated that BRADY et al '688 discloses a heat-sealed bag but fails to disclose the bag as having a folded bottom, but that HERRINGTON discloses the use of a folded bottom in a heat sealed bag for the purpose of forming a pouch shape.

In response, Appellants again note that since the side seal patch bag illustrated in Figures 8, 9, and 10 of BRADY et al '688 has bottom edge 206 which one of skill in the art would recognize as a folded edge (i.e., one of ordinary skill in the art would have known that all side-seal bags have a folded bottom edge), HERRINGTON is rendered unnecessary

and redundant as a reference. However, Appellants contend that Claim 4 is patentable over BRADY et al '688 in view of HERRINGTON, for at least the reasons that Claim 2 is patentable over BRADY et al, as set forth under heading I(B) above.

IV. Claims 14-15, 17, and 19-22 Are Patentable over BRADY et al '688 in view of SAMSON

Claims 14-15, 17, and 19-22 stand rejected as unpatentable over BRADY et al '688 in view of U.S. Patent No. 3,616,004, to Samson ("SAMSON"). The Office Actions have stated that BRADY et al '688 discloses a process for making a patch bag by adhering first and second patches to the outside surface of a lay-flat tubing with both patches having a width greater than the width of the tubing, sealing an inside surface of the film tubing to itself by applying heat to each of the patch outside surfaces, and cutting across the tubing...but that BRADY et al '688 fails to disclose heat applied by a first and second means for heating, which means are in alignment with one another, with the patches and bag tubing being therebetween during sealing. The Office Actions have relied upon SAMSON as teaching a method of sealing films comprising applying heat by first and second heating means which are in alignment with one another, for the purpose of sealing films with strength and uniformity. The Office Actions have concluded that on this basis it would have been obvious to one of ordinary skill in the art to have modified BRADY et al '688 by providing first and second means for heating in alignment with one another, in order to produce a seal with strength and uniformity, as taught by SAMSON.

In response, Appellants continue to maintain that Claims 14-15, 17, and 19-22 are patentable over BRADY et al '688 in view of SAMSON. Appellants further contend that that the Office Actions have not made out a prima facie case of obviousness of any one or

more of Claims 14-15, 17, and 19-22 as obvious over BRADY et al '688 in view of SAMSON.

In BRADY et al '688, both the bag film and the patch film are primarily ethylene-based resins, such as linear low density polyethylene (i.e., LLDPE), ethylene/vinyl acetate copolymer (i.e., EVA), and ethylene/butyl acrylate copolymer (EBA), which have melting points relatively close to one another. However, in SAMSON, the sealing method and apparatus employed, including the use of upper jaw 3 and lower jaw 4, is for the purpose of making a "particularly uniform and high strength seal" (SAMSON Col. 1 lines 29-31) of films which are "...***each built up of two or more alternating layers of different thermoplastic component polymers having different softening points***" (SAMSON Col. 1 lines 7-9, emphasis added). More particularly, SAMSON discloses a method for sealing multilayer films having successive layers that are virtually immiscible with each other...such as alternating layers of ***polyethylene*** and ***polyamide*** (see SAMSON Col. 1 lines 50-55) so that "...two or more layers of the highest melting polymeric component are fused together to provide a particularly uniform and high strength seal." (SAMSON Col. 1 lines 29-32). Appellants note that it is well known to those of skill in the art that the melting point difference between ethylene-based polymers and polyamides is far greater than the melting point differences between the ethylene-based polymers of BRADY et al '688.

Even more particularly, SAMSON teaches a method in which the films are first heated to a first temperature which is at least the softening point of the lowest melting component but lower than the softening point of the highest melting component, followed by heating the film to a temperature which is at least equal to the softening point of the

highest melting component, in order to fuse together the layers having containing the polymer having the highest melting point.

Claim 1 of SAMSON sets forth this process, as follows:

> 1. A method for sealing at least two multilayer polymeric films by the application of heat and pressure, said films each being built up of two or more alternating layers of different thermoplastic component polymers having different softening points, which comprises applying pressure to at least two of the multilayer films arranged to be sealed together in a sealing area, simultaneously heating the films in said area to a first temperature which is at least equal to the softening point of the lowest melting component but lower than the softening point of the highest melting component, and then heating the films in the sealing area to a second temperature which is at least equal to the softening point of the highest melting component, whereby said layers of the highest melting component are fused together to provide a seal between the films. [Claim 1 of SAMSON, i.e., Col. 3 lines 13-26, emphasis added]

This excerpt from SAMSON stands as evidence that one of skill in the art would turn to the method of SAMSON if there is a need to seal a film having alternating layers of polymers of substantially different melting points, such as alternating layers of polyethylene and polyamide.

In addition, the specification of SAMSON states that the strong seal is made by first heating to the softening point of the lowest melting component while maintaining a high pressure, and thereafter raising the temperature of the seal bars to the softening point of the highest melting component, while lowering the pressure, so that the layers containing the higher melting polymer are fused to one another in the seal area:

> Heretofore, it has been found that the sealing of two polymeric multilayer films by the methods usually employed for monolayer films generally leads to seals of insufficient strength and uniformity.
>
> Advantageously, the present invention provides a method of sealing multilayer polymeric films which does not have these drawbacks.
>
> Thus, this invention contemplates a method for sealing multilayer polymeric films in which at the sealing area, the multilayer films, which are kept under an initial pressure, are first heated to a temperature that is at

> least equal to the softening point of the lowest melting polymeric component, but lower than the softening point of the highest melting polymeric component of the films, and the films are only then heated to a temperature which is at least equal to the softening point of the highest melting polymeric component.
>
> It has surprisingly been found that in this way, ***two or more layers of the highest melting polymeric component are fused together*** to provide a particularly uniform and high strength seal. According to the invention, when the pressure during the first heating step is kept sufficiently high, i.e., higher than 100 kg./cm^2, but preferably between 300 and 1,800 kg./cm^2, then a seal is obtained that has a strength equal to or greater than that obtained with comparable monolayer films.
>
> According to the invention especially favorable results are obtained when during the second heating step at a higher temperature the pressure applied to the sealing area is kept considerably lower than that applied during the first heating step. It is preferred that during the second heating step the pressure applied to the sealing area should be about 2 to 8 kg./cm^2. [SAMSON, Col. 1, lines 19-42, emphasis added]

Thus, one of skill in the art would recognize upon reading SAMSON that the reason for sealing together the layers containing the highest melting polymer is to obtain a seal of greater strength than would be obtained if the lower melting polymer is bonded together to make the seal. Thus, one of ordinary skill in the art would have read SAMSON in its entirety and would have seen that the objective of SAMSON is ***obtaining a high strength seal by sealing together the layers containing the high melt point polymers after the lower melt point polymers have been melted and forced out of the seal area.*** As a result, one of skill in the art would not have been motivated to apply the method or apparatus of SAMSON to producing a through-the-patch seal of a patch bag of BRADY et al '688, because neither the patch film nor the bag film in BRADY et al '688 contain alternating layers of high and low melting point polymers. Both the bag and patch films of BRADY et al '688 are primarily olefin-based, and as such have layers which are of relatively low melting points. Use of the apparatus plus temperature and pressure program of SAMSON

(see FIG. 1 of SAMSON) would result in burning through the entire bag and patch structure of BRADY et al '688, as neither the patch film nor the bag films contains any substantial quantity of a significantly higher melting component. Again, the method and apparatus of SAMSON are specifically designed to exclude the low melting point polymer from the seal area. As such, it is clear that one of ordinary skill in the art would not have had any motivation to utilize the apparatus and process of SAMSON to make a through-the-patch-and-bag seal in accordance with Appellants' process Claims 14-15, 17, and 19-22. As a result, Appellants continue to maintain that the Office Action fails to make out a prima facie case of obviousness of any one or more of Claims 14-15, 17, and 19-22 as unpatentable over BRADY et al '688 in view of SAMSON.

The final Office Action of 3 June states that SAMSON does not teach that the method disclosed is limited only to films containing alternating layers of high and low melting point polymers or polymers having different softening points. The final Office Action states that SAMSON teaches a method of sealing films which comprises applying heat with first and second jaws in alignment to provide a seal of strength and uniformity, and that one of ordinary skill in the art would have recognized the advantage of providing for the method of SAMSON in BRADY et al, which is also a sealable film.

In response, Appellants contend that in assessing the patentability of Appellants' claims, SAMSON must be considered in its entirety, and that one cannot take from SAMSON only the teaching of the sealing means without also taking from SAMSON the basis for the teaching of the sealing means and method, i.e., obtaining a strong seal by forcing low melting components out of the seal area so that higher melting components can form a heat seal with one another. The apparatus, process, and films of SAMSON are

inexorably linked. As such, they are not operable in sealing through the patch and bag of BRADY et al '688, as to do so would burn through both the patch film and the bag film, as the heat and pressure would have been applied to films which have no "higher melting component" as found in the films of SAMSON.

V. Claims 16, 18, and 21-23 Are Patentable over BRADY et al '688 in view of SAMSON further in view of SHABRAM

Claims 16, 18, and 21-23 stand rejected as unpatentable over BRADY et al '688 in view of SAMSON, further in view of U.S. Patent No. 3,340,776, to Shabram ("SHABRAM"). The Office Actions rely on BRADY et al and SAMSON as in the rejection of Claims 14, 15, 17, and 19-22, and state that BRADY et al and SAMSON both fail to disclose seal bars having a convex surface and seal bars which comprise nichrome, but that SHABRAM teaches the use of a convex surface for the purpose of making a seal bar having simplified construction, with nichrome wire as the heating element for the purpose of heating electrically. The Office Actions state that on the basis of these facts it can be concluded that it would have been obvious to one of ordinary skill in the art at the time the invention was made to have provided for a convex surface in BRADY et al and SAMSON in order to make a seal bar of simplified construction, and further that it would have been obvious to have provided nichrome wire in order to heat electrically.

In response, Appellants contend that Claims 16, 18, and 21-23 are patentable over BRADY et al in view of SAMSON further in view of SHABRAM. Appellants contend that the Office Actions (including the final Office Action) fail to make out a prima facie case of obviousness. Appellants point to the arguments for the patentability of Claims 14, 15, 17, and 19-22, above. Appellants contend that these arguments apply equally to each of Claims

16, 18, and 21-23. Furthermore, Appellants contend that SHABRAM does not disclose a seal bar having convex surface for the purpose of making a seal

Turning specifically to Claim 16, Appellants further contend that the V-shaped members to which the Office Actions refer, i.e., the V-shaped members disclosed in SHABRAM, do not disclose a seal bar having a convex surface:

> The lower sealing bars have a much simpler construction than the upper sealing bars and consist merely of a cross member 148 having ends 150 corresponding in function to the lugs 116 on the upper sealing bar, i.e. fitting between the V-belt and the flat belt on the lower pulleys. Pads of heat-resistant silicone rubber 152 having a slot 154 in the center thereof, are provided on the outer surface. ***Near each end of the bar*** **convex V-shaped members 156 are provided which are in line with and which are complementary to the V-shaped members 144 on the upper bars**. [SHABRAM, Col. 4 lines 24-35, emphasis added].

The V-shaped members 156 are *alignment means* for use in conjunction with other elements which apply the heat to make the seal. FIG. 8 of SHABRAM illustrates elements 144 and 156, which align with one another (see FIG. 10 of SHABRAM) during sealing, but which are merely alignment means attached to the ends of the seal bars. That is, elements 144 and 156 do not participate directly in the formation of the heat seal, i.e., unlike Appellants' seal bars, they do not contact the films to make the seal. The actual elements in SHABRAM which contact the films to produce the heat seal is nichrome sealing ribbon 130, upper pads 120 and 124, and lower pad 152 having slot 154 therein. Again, V-shaped members 156 are present near each end of each lower seal bar, and are complementary to the inverse V-shaped members 144 on the upper bars. See character 144 in FIG. 9 of SHABRAM, which illustrates the position, size, and location of upper inverse V-shaped member 144, which corresponds with the position, size, and location of lower V-shaped member 156. Although

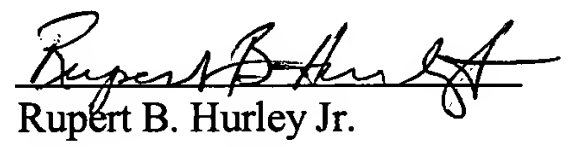
V-shaped member 156 is not illustrated in FIG. 9, the above excerpt from Col. 4 of SHABRAM clearly discloses upper inverse V-shaped member 144 as being present "...near the end of each bar...." This corresponds with inverse V-shaped member 144, and clearly separates inverse V-shaped member 144 and V-shaped member 156 from that portion of the apparatus which actually seals the films together.

Based on all of the arguments set forth above, Appellants contend that Claims 16, 18, and 21-23 are patentable over BRADY et al in view of SAMSON further in view of SHABRAM.

VI. Conclusion

Reconsideration of the patentability of the pending claims is respectfully requested, with a view towards allowance based on the arguments set forth above.

Respectfully Submitted,



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(8) Claims Appendix

LISTING OF THE CLAIMS

Claim 1: An end-seal patch bag comprising a heat-shrinkable bag comprising a seamless tubular bag film, and a heat-shrinkable patch comprising a patch film, the patch being adhered to the bag, the patch extending across an entire width of a first lay-flat side of the tubular bag film, the patch bag having a seal across the bottom thereof, the seal being continuous across the entire width of the lay-flat bag film, the seal being through the patch as well as through both lay-flat sides of the bag, the seal being the only seal across the bag, the bag having a top which is not covered by the patch.

Claim 2: A patch bag comprising a heat-shrinkable bag comprising a tubular bag film, and a heat-shrinkable patch comprising a patch film, the patch being adhered to the bag, the patch bag having a seal which is through both the patch as well as through both lay-flat sides of the bag, the sealed bag having a burst strength of at least 26 inches of water in a Linear Ramp Hot Burst Grease Test.

Claim 3: The patch bag according to Claim 2, comprising a first patch adhered to a first lay-flat side of the bag, and a second patch adhered to a second lay-flat side of the bag, and the seal is through both patches and the bag film.

Claim 4: The patch bag according to Claim 3, wherein the patch bag is a side-seal patch bag, and both the first patch and the second patch extend across an entire length of the bag, the patch bag having a first seal along a first edge of the bag and a second seal along a

second edge of the bag, and a folded bottom edge, the first and second seals being through the first patch, the second patch, and the bag film.

Claim 5: The patch bag according to Claim 3, wherein the patch bag is an end-seal patch bag, and both the first patch and the second patch extend across an entire lay-flat width of the bag film in a lay-flat position, the end-seal patch bag having a bottom seal across the bag, the seal being through the first patch, the bag, and the second patch.

Claim 6: The end-seal patch bag according to Claim 5, wherein the bag has an uncovered top portion.

Claim 7: The end-seal patch bag according to Claim 5, wherein the patches are adhered to the tubular bag film with an adhesive.

Claim 8: The end-seal patch bag according to Claim 5, wherein the patches are adhered to an outside surface of the tubular bag film, and the entirety of the patch films are adhered to the tubular bag film.

Claim 9: The end-seal patch bag according to Claim 5, wherein each of the patches is wider than the lay-flat width of the tubular bag film.

Claim 10: The end-seal patch bag according to Claim 5, wherein the tubular bag film is seamless.

Claim 11: The patch bag according to Claim 2, wherein the seal is made through films having a total thickness of from about 5 to 30 mils.

Claim 12: The patch bag according to Claim 11, wherein the seal is made through films having a total thickness of from about 10 to 20 mils.

Claim 13: The patch bag according to Claim 2, wherein the seal has a width of from about 0.015 inch to about 0.25 inch.

Claim 14: A process for making a patch bag, comprising:

(A) adhering first patch film to an outside surface of a first lay-flat side of a lay-flat bag film tubing, the first patch having a width greater than the width of the lay-flat tubing;

(B) adhering second patch to an outside surface of a second lay-flat side of a lay-flat bag film tubing, the second patch also having a width greater than the width of the lay-flat tubing;

(C) sealing an inside surface of the film tubing to itself, the sealing being carried out by applying heat to each of the patch outside surfaces, the heat being applied by a first means for heating and a second means for heating, the first and second means for heating being in alignment with one another, with the patches and bag tubing therebetween during sealing; and

(D) cutting across the tubing.

Claim 15: The process according to Claim 14, wherein the first means for heating comprises a first seal bar which has a flat surface which is in alignment with, and oriented towards, the second means for sealing, which comprises a second seal bar.

Claim 16: The process according to Claim 15, wherein the second seal bar has a convex surface which is in alignment with, and oriented towards, the flat surface of the first seal bar.

Claim 17: The process according to Claim 15, wherein the second seal bar has a flat surface which is in alignment with, and oriented towards, the flat surface of the first seal bar.

Claim 18: The process according to Claim 17, wherein the first seal bar and the second seal bar each comprise nichrome wire.

Claim 19: The process according to Claim 15 wherein the first seal bar is in a first seal jaw assembly, and the second seal bar is in a second seal jaw assembly, and at least one of the seal jaw assemblies comprises a means for shock absorption.

Claim 20: The process according to Claim 19, wherein the means for shock absorption comprises a resilient member.

Claim 21: The process according to Claim 16, wherein the bars exert a pressure on the films of from about 50 to 150 psi.

Claim 22: The process according to Claim 15, wherein the first seal bar comprises nichrome wire and the temperature of the first seal bar is controlled so that it reaches a maximum temperature of from about 180F to 400°F in the vicinity of the film being sealed, and wherein the temperature of the second seal bar is controlled so that it reaches a maximum temperature of from about 180°F to 400°F in the vicinity of the film being sealed.

Claim 23: The process according to Claim 22, wherein a means for controlling the temperature constantly monitors and controls voltage and current flowing through a nichrome wire in each of the first and second sealing bars, so as to constantly monitor and control the temperature of the first and second sealing bars at a pre-set maximum temperature during sealing.

(9) Evidence Appendix

No evidence described in 37 CFR §41.37(ix) was submitted by Appellant or entered by the Examiner.

(10) Related Proceedings Appendix

There are no other appeals, interferences or judicial proceedings known to Appellant, Appellant's legal representative, or Assignee which may be related to, directly affect, be directly affected by, or have a bearing on the Board's decision in the pending appeal.